

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 5, 1999

TO: G.W. Cunningham, Technical Director
FROM: Paul F. Gubanc and David T. Moyle, Oak Ridge Site Representatives
SUBJ: Activity Report for Week Ending November 5, 1999

Staff member Monique Helfrich was at Y-12 this week to observe the DOE RA of EUO Reduction.

A. Enriched Uranium Operations (EUO) Reduction Process: This week, the DOE readiness assessment (RA) of reduction concluded that the contractor was **not** ready to commence operations and that expectations for rigorous conduct of operations and criticality safety controls should be reinforced with the contractor workforce. Key observations included:

1. While the operators themselves displayed adequate knowledge and disciplined conduct of operations, the supervision and support personnel did not. For example, management's response to an RA team-identified criticality safety infraction was slow and superficial. In another instance, an electrician utilized a paperclip to complete an electrical connection for testing after which he connected to the wrong component. These deficiencies had to be identified by the DOE Facility Rep. Lastly, operations attempted to perform evolutions even though prerequisites were not established (e.g., vacuum pressure) and subsequently skipped procedural steps to compensate.
2. As mentioned above, violation of a criticality safety posting was identified by the team (with the assistance of Mr. Moyle). The posting's spacing requirement is impossible to comply with in some portions of the reduction area and this deficiency exists elsewhere in EUO.
3. Only two of eight reduction operations/evolutions were successfully completed in three days. Many of the difficulties appear to have been caused or compounded by numerous procedural and equipment modifications made immediately prior to or during the RA.

The RA team did not complete its review of all areas outlined in their plan before concluding that operations were not ready to commence. Their report is expected November 19. The RA team conducted a thorough and professional review.

In addition to the observations of the RA, the staff has several additional concerns:

1. A technical basis for reduction reactor vessel integrity and a clear path forward for testing has still not yet been developed.
2. While the reduction blending procedure requires verification of an acceptable moisture sample in the UF₄ feed, there is no mention of an acceptable interim storage time between sampling and processing of the UF₄.
3. The NFPA code compliance inspections for the reduction furnaces did not include all applicable portions of the National Electric Code (NFPA 70). (These code inspections were prompted by the Board staff's review of the gas-fired Holden furnace during Phase A2.) This may have implications on the E-Wing casting furnaces which are also induction furnaces.

In response to the above and other issues, the following changes are being implemented:

1. Effective Thursday, LMES appointed Vice President Harold Conner as the new EUO manager. Additional changes are also underway; the full extent of which are not yet apparent.
2. DOE will realign existing Y-12 Fac Rep responsibilities to increase their EUO presence.
3. Bldg 9212 operations are stopped pending staff retraining next week on conduct of operations and criticality safety. This training will extend to all of Y-12 over the next two weeks. (2-A)

cc: Board Members